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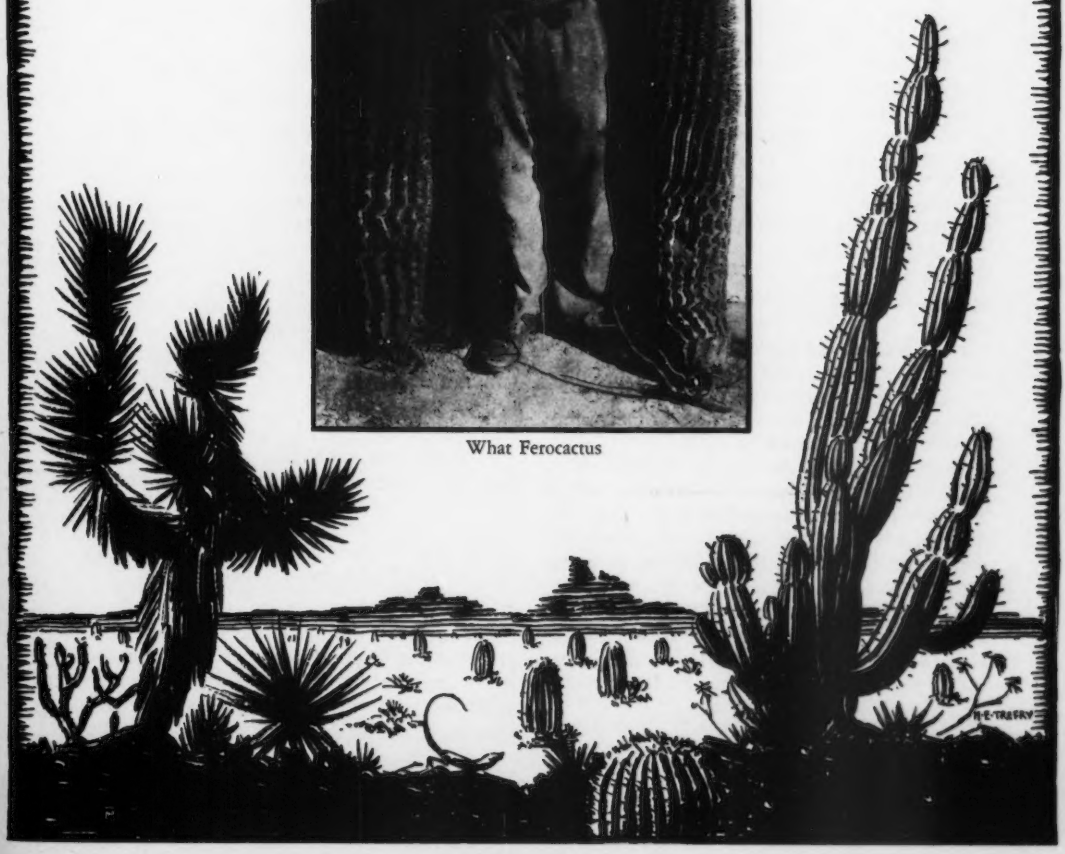
# CACTUS AND SUCCULENT JOURNAL

**Of the Cactus And Succulent Society Of America**

VOL. V. MARCH, 1934 NO. 9

What Ferocactus



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## WHAT FEROCACTUS???

We are informed that these plants are the two largest specimens of this species ever discovered in So Africa. The picture on page 529 and the species itself look so much like a cactus that the majority of non-botanical collectors always mistakenly identify them as such. If the plants instead of a photograph were at hand, this mistake could be caught at once by a pin prick which would cause a flow of latex and reveal the error.

For more than a year this picture has furnished much amusement; shown to perhaps fifty of our cactus-wise nomenclators with the request that they identify the two plants, not one took them to be a member of the Euphorbiacea. Neither did any one identify the plants as being other than Ferocactus. A few called them a possible new species of the Ferocactus group, while others were positive of their identification for one reason or other.

One cautious person that is familiar with both cacti and the Euphorbiae was more tactful than the rest and answered with the question, "Where are the plants from?" The answer to that question unravels their identity, since no cacti are native to Africa.

The two plants are *Euphorbia horrida* Boiss, and the photograph was received from Dr. R. E. Pulliene of South Australia with the information that he was negotiating for the purchase of the smaller of the two plants.

Our experience with *E. horrida* is that it is the hardiest of all the Euphorbias. The plant seems to propagate from small cuttings fairly rapidly, yet it is recognized to be one of the rarest.—G. A. F.

## FRICKS NOTES

In a village of aborigines near Lake Chad in French West Africa the natives eat the dung of the cattle that have eaten the Euphorbiae occurring in that vicinity to obtain by this means the highly prized condiment furnished by the modified latex remaining therein.

The name Euphorbia is defined as follows in the Standard dictionary: Eu-phor-bi-a, any of a large, widely distributed genus of herbs and shrubs of the spurge family, which is a source of medicinal gum resin.

A display of about 100 rare and splendid specimen plants of Euphorbiae were shown at the Wilshire Bullock's department store last month. These attracted many visitors and received much complimentary comment and publicity in the Los Angeles papers.

*Elaeophorbia* Stapf. is the name of a sub genus of the Euphorbiaceae with but two species. The floral structure of which is exactly as in Euphorbia from which it differs only by its fruit.

FIG. 7. *Cereus nesioticus* K. Sch. on coastal lava-flats, Narborough Island. Photographed by Toshio Asaeda.

# Cacti in the Galapagos Islands*

PART II.

*By* JOHN THOMAS HOWELL

*Assistant Curator of Botany, California Academy of Sciences*

Unlike the Galapagian species of Opuntia which appear to be rather closely related to one another, the two species of Cereus are very different in habit and floral characters. In fact, they are so diverse, Britton and Rose placed them in two distinct genera, *Brachycereus* and *Jasminocereus,* each a monotypic and endemic genus erected to take care of one of the remarkable species. The present writer, feeling uncertain of the relation of the island plants to those on the mainland, recently referred the species again to the genus *Cereus* in which they were first described. As species of *Cereus* they are discussed here.

Already *Cereus Thouarsii* Weber has been described as it occurs in its most magnificent form in the cactus forest at Academy Bay on Indefatigable Island. The tall and slender trees found there are in marked contrast to the lower, queerly jointed type found on the lava pavements of southwestern Albemarle Island or on sterile lava flows of recent origin. In the taller type, the joints are more elongated and oblong, but in the shorter type, the joints are thicker in proportion to their length and are elliptical. It is this shorter type with its peculiar swollen joints that adds so much to the remarkable assemblage of plants bordering the lagoons on the west side of Albemarle Island.

Like *C. Thouarsii, C. nesioticus* K. Sch. is also one of the very first plants to grow on fresh lava flows in the Galapagos Islands, but unlike the former species, *C. nesioticus* is never found anywhere except amid the sterile waste of its chosen home. It seems utterly intolerant of the company of shade-producing plants or the conditions which allow such plants to grow. This hermit among Galapagian cacti is one of the most attractive species in the islands, a low plant about one to one and a half feet tall, composed of a clump of cylindrical stems that are densely covered with short golden or tawny

*EDITOR'S NOTE: For a scientific account of the Cactaceae of the Galapagos Islands by Mr. Howell, see the Proceedings of the California Academy of Sciences, 4th series, vol. 21, pp. 41-54.

FIG. 8. *Opuntia Zacana* Howell. Plant from which a type specimen was collected, North Seymour Island. Photographed by J. T. Howell.

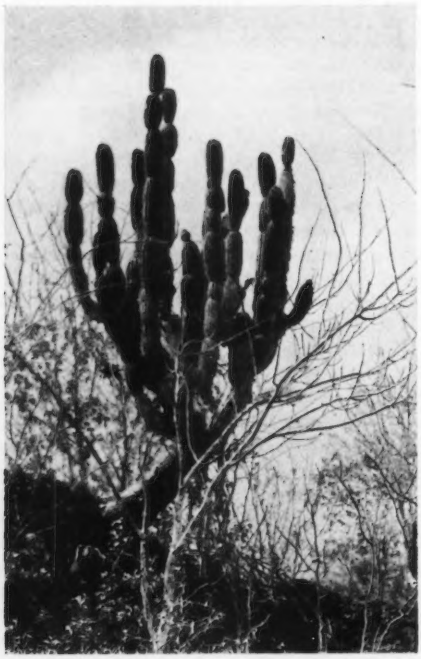

FIG. 9. *Cereus Thouarsii* Weber at Conway Bay, Indefatigable Island. Photographed by Toshio Asaeda.

spines. Ordinarily not more than twenty stems form a plant but in the large clump figured here, the largest one seen, there were more than three hundred cylinders. Extraordinary is the appearance of this plant as it grows in its compact and well ordered form, thriving in the midst of the desolation of barren lava and wresting therefrom its peculiar type of beauty.

So ends a sketch of Galapagian cacti. On coastal slopes and bluffs, they frame vistas of the surf-bordered blue of the broad Pacific; from their midst one looks inland to the great volcanoes about whose tops form and dissolve the mists and clouds of the tropical air; in the monotonous waste of recent lava, they are the first assurance of life to come, the harbinger of brush and forest. Wherever one is found, it is the distinctive element in the vegetation, scenically a feature of high order, botanically a plant to be remembered as unique.

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For those who are keeping the Notes to Volume I of the CACTACEAE, it is suggested that they send to the California Academy of Sciences for the reprint of the article mentioned in the Editor's Note on the preceding page. The cost is 20c and the bulletin is sent postpaid. Address the California Academy of Sciences, Golden Gate Park, San Francisco, California, and describe the pamphlet as it is listed in the Editor's Note.—E. M. BAXTER.

# Some Remarks On Mesembryanthemums

*By* R. W. POINDEXTER

Some time ago I promised your Editor to contribute an article on Mesembryanthemums, and though he has kept at me in a most flattering way, I realized on further consideration that my qualifications are limited. So you must consider these random notes as coming from one amateur to another. If you are an expert, don't be too critical. If they possess merit it is due to the collaboration of Mr. J. R. Brown and Mr. Carl Pfadenhauer, of the Soldena Gardens, which possesses a Mesem collection of the first magnitude.

There are some 2000 species of Mesems. No one knows the exact number. Many have been discovered within the last few years. It is truly astonishing what permutations nature has accomplished in the plant habits and leaf forms of this large group while maintaining such a close similarity in flowers and seed pods. Indeed it is doubtful whether any other equally large botanical group exhibits such coherence in regard to the latter features. The nomenclature and the classification of the Mesems are in a state of flux. Originally considered a single genus, on account of the similarity of flowers, *Mesembryanthemum* has been divided into over a hundred new genera.

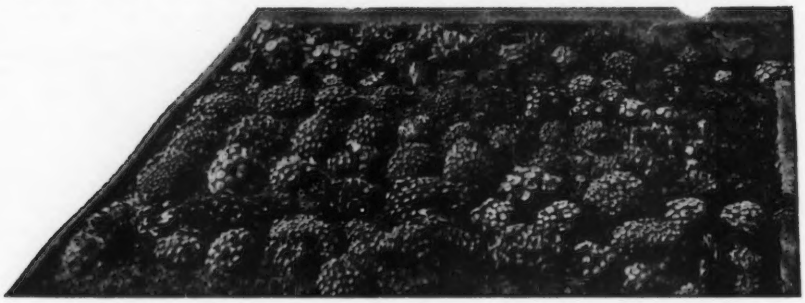
For horticultural convenience, Mesems may be divided into three groups: shrubby, trailing, and stemless. Although among the first two groups the most gorgeous floral displays are to be secured, it is the stemless group that finds most favor with the collector of succulents. This is natural enough; his space is usually limited. The larger types can be worked into a general garden plan with telling effect in those climates that are mild enough, but would be out of balance in a rockery or hothouse collection where other specimens are small.

## CULTIVATION

Since my experience with growing conditions is limited to Southern California, I am at a disadvantage in offering cultural suggestions to members living in cold winter climates. Here we are particularly fortunate in having conditions very similar to those under which the Mesems were developed, namely dry summers and wet winters. Thus the growing seasons, as we think of them for plants in general, are reversed. The most active growing and blooming season comes in winter and spring, and a resting season in summer. In many parts of South Africa, water is the controlling condition rather than temperature. As this is also the way in which the majority of our California wildflowers have to grow, it is not surprising that there are two or three Mesems listed as natives in textbooks. It overstretches my imagination to visualize three plants originating here and turning out to be identical with three which also happen to be natives of Australia, South Africa and the Mediterranean region respectively. At any rate, whether native or introduced, they have made themselves thoroughly at home, and are a useful addition to our wild vegetation. If introduced, they are the only introduced succulents, to my knowledge, which have gone wild.

Courtesy H. J. Solomon, *Australia.*

The species of Lithops are typical stemless Mesems.



Courtesy H. J. Solomon, *Australia*.
Various species of *Conophytum*

This again is an indication of the suitability of this climate to Mesems.

The Mesembryanthemum enthusiast in colder climates is faced with certain difficulties on account of this growing season. But while there are some cranky members, the group as a whole is good natured and adaptable. If you have available a copy of "MESEMBRYANTHEMA", by Brown, Tischer and Karsten, (reviewed in this Journal, Vol. III, p. 151) you will find that the first chapter deals thoroughly with cultivation in cool climates. This chapter, which is by Dr. Tischer, is too long to quote in detail. The use of pots which are neither too large nor too small is emphasized; pots of less than two inches diameter are useless because of excessive drying out. Shallow pots are preferred to deep ones. Good drainage is of the greatest importance. This is more important than the kind of soil; indeed Dr. Tischer says "they will grow in almost any kind of soil, if only they are properly treated." Proper treatment includes plenty of light and good ventilation and the avoidance of too high a temperature. Watering is to be done with circumspection. It is better to give too little water than too much, remembering always that "No plant can live without water—not even a Mesembryanthemum." Dr. Tischer recommends taking the whole collection out of doors as soon as danger of frost is over, with the precaution of giving at first a regulated amount of shade, to be gradually removed as the plants accustom themselves to the brighter light, and also protection from excessive rainfall by covering with glass during storms.

Dr. Alwin Berger, in his text on Mesems agrees in general with Dr. Tischer but differs *in recommending a fairly rich soil, whereas Dr.* Tischer avoids the use of any fertilizer. Dr. Berger advises making cuttings of the shrubby varieties in the fall, wintering these under glass and planting them in the spring out of doors, where they will grow on to make blooming plants. These he later abandons to freeze, after another crop of cuttings has been started.

When it comes to cultivation out of doors, in sufficiently mild climates, the first and almost the only requisite is sunshine. If you have only shaded space available, leave Mesems out of your succulent collection. It would have been more appropriate to name them "sunplants" than "mid-day-flowers," since many of them bloom in the late afternoon and some are strictly nocturnal. *Heliophytum* would not have been a more formidable word than *Mesembryanthemum*.

It is true that they are unusually tolerant as to soil condition, and many of them will grow well in open ground even with poor drainage, though others will not. The fact that plants are botanically related is no sign that they require identical treatment. No matter what group of plants you are working with, it pays to study the requirements of each individual, not of each genus. Mesems, however, are more similar to each other in requirements than are the members of most other groups of succulents.

Don't keep Mesems in a greenhouse or a lath house if you can plant them in the open. They don't need pampering and it is apt to disagree with them. As to cold, they are hardier than many of the other kinds of succulents and most of them will stand morning frosts down to about 26° F. Also bear in mind that the majority need a summer resting period, which they should be allowed to take by letting them go fairly dry, especially if they are well established. *This does not apply to some of the shrubby* varieties, which will die in one summer if not watered at all.

My experience indicates that you are safe in

using reasonable amounts of fertilizer if you want to. It will make your plants grow faster and larger. Be cautious, however, with the very succulent species. Fortunately, Mesems when out of doors, are very little attacked by pests. Why this should be so is a mystery, since they are non-poisonous and unprotected, and should be excellent food for all sorts of bugs. Birds will eat the leaves of some of the very fleshy ones, such as *Argyroderma, Pleiospilos, Gibbaeum,* etc., and sometimes caterpillars eat out the young central leaves. For either of these attacks lead arsenate may be used. This will kill the caterpillars and keep away the birds, who seem to know arsenic instinctively and avoid it. Mesems are not immune to nematodes; few succulents are, but nematodes do not appear to be a fatal menace. The only control is by soil sterilization.

*Dinteranthus puberulus* seedlings, x 0.3
Soldena Gardens, Altadena
A new and rare Mesem

## PROPAGATION

Propagation is important not only to secure additional species for your collection but for the replacement of old plants which have become weakened or unsymmetrical. Compared with cacti, the Mesems are short-lived plants. Youth will serve you best.

Seed germination varies from species to species. In general, the stemless group shows better germination than the shrubby group. This is fortunate, since seed is the only available means of propagating the very succulent species from which no cuttings can be obtained. Seed should be handled very much as cactus seed is, in seed-pans of pottery or in shallow wooden trays. Since the seed should be covered very lightly, or not at all, it is preferable to water from beneath, so as not to disturb the surface, until the seedlings are sufficiently rooted to permit watering from above. The trays may be loosely covered with glass or paper to conserve surface moisture, but this should be removed as soon as plants appear. The methods for growing cactus seed have been gone into in such detail by various writers that it is not necessary to repeat them here. (See article in this Journal, Vol. II, p. 447). There are three points of difference from cactus seed; give the Mesems lower temperature, more light, more air.

Strangely enough, or perhaps not so strangely, some of the species, particularly shrubby ones, germinate out of doors from self-sown seed better than under glass. Not only that, but in the coolest part of the year. There is no equivalent for winter rains for bringing up our local wildflowers (and weeds) and these Mesems follow the same rule. You may water the seed of the beautiful annual *Dorotheanthus criniflorus* as much as you like in warm weather without result, and have it come up abundantly in the same spot after the first winter rain. Self sown seed of *Mesembryanthemum Brownii, Aptenia cordifolia,* and many species of *Glottiphyllum, Hereroa, Bergeranthus,* etc., volunteer this way.

If you don't like these long names, don't blame me for them. I'm not so strong for them either, but there just isn't any other way to indicate which particular one of the 2000 species you are talking about. Of course you are entitled to call any mesem a 'fig-marigold' or an 'iceplant' or a 'living stone,' but how is the person you are talking to going to know which species you mean? You are not advised to memorize botanical names nor are their correctness nor permanence always guaranteed, but they will at least serve to enable you to secure from dealers the particular plants you may want.

Propagation by cuttings is very easy with most species, though difficult with a few. While they may be rooted at any time of year, those which are winter growers will root best during the growing period. In this, these Mesems depart from the general rule for succulents—make cuttings only in warm weather. In fact with the

shrubby varieties and winter growers the unrooted cuttings will often do better if planted during rainy weather directly where they are to remain, than if rooted in sand for later transplanting. Stems for cuttings should be reasonably mature, and in vigorous condition. The cut should be made with a sharp knife just below a joint, trimming off leaves and side branches at this point if any are present. Such genera as *Nananthus* and *Stomatium* which form compact, tufted plants from a carrot-like central tap root may nevertheless root easily. The short, stumpy branches should be cut off just above the tap root and rooted in sand. Be careful not to leave any of the root on the cutting. Whether you are propagating or merely moving a Mesem it is well to bear in mind that old roots are more susceptible to injury than the stems, and it is usually better to start cuttings than to try to move an old plant unless the root system can be taken out entire and uninjured.

Where a special medium for rooting cuttings is used, it may be clean, sharp sand, such as is used for cuttings in general. The sand should be kept moist, but plenty of light and air should be given. It is not necessary to dry out Mesem cuttings before putting them in the sand, as is the case with cactus cuttings, and though it may give good results in some cases, it is usually better not to.

*(To be continued)*

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If you are fearful of losing your Euphorbias through lack of water during the dormant season, it will be well to recall this African newspaper item from the Uitenhag Times. Mr. John Kirkman, of Advice, writes the following: "The state of the country can scarcely be worse than it is here; we have had no rains for eleven months, and the loss of stock is frightful; in this field-cornetcy not less than 14,000. One farmer alone has lost 150 head of cattle and 1,000 sheep, another 1,200 out of a flock of 1,700. I am now feeding my cattle on vingerpol, or Dwarf Euphorbia. It is a great pity farmers do not cultivate it and preserve it especially for dry seasons. I am now feeding 100 head on it, and up to the present time have not lost any."

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We are wondering what's going to be new euphorbiaceously when the Straus West African Expedition of the Field Museum returns.

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*E. nivulia* Haw. is the only cactoid sort we have a record of as native to China. This perhaps is adventive from Africa as a number of species, doubtless as curiosities, were long ago introduced by Arab traders into India and from there the Chinese carried them to South China, where in many parts they are today serving as hedges to fence in homesteads.

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According to one legend, the presence of *Euphorbia Caput-Medusae* in Africa is accounted for as follows: Persus, after killing Medusa, flew across Africa with her head, and the drops of blood which fell on the sands took root and turned into clusters of writhing snakes.

African farmers in Ngamiland claim that it has been found that milk, butter and cheese made from animals that have eaten of the Euphorbiae impart a taint that is disagreeable to the taste.

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There is a species of Crassulaceae in Africa that attaches itself to Euphorbia's in much the same manner as our misteltoe does on trees in America. From photographs seen of a plant of *E. coerulescens* with the parasite attached, the Euphorbia seems to be able to provide sustenance for both.

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The juice of many of the African species of Euphorbia is used by the natives to poison the points of arrows.

### EDITOR'S CORRECTION

In last month's Journal the article "California Cacti" by E. M. Baxter was incorrectly made up and gave the impression that a new species was being described. Such is not the case, and readers are asked to indicate in their copies that the paragraph in italics beginning *"The following original description"* should be at the beginning of the article; and quotation marks should be placed around "Opuntia humistrata, sp. nov." and the first three paragraphs in bold face type.

### CATALOGUES RECEIVED

R. GRAESSNER, Perleberg, Germany. Free.

FERDINAND SCHMOLL, Caderayta, Qro. Mexico. Free.

J. A. McDOWELI Apartado 167, Mexico D. F. Free.

H. WINTER, Frankfurt Am Main, Fechenheim, Germany. Free.

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**The following 8 pages are reprinted from "The Cactaceae" by N. L. Britton and J. N. Rose.**

# Notes on Oklahoma Cacti

*By* MARION SHERWOOD LAHMAN

Oklahoma is an in-between region of the plant world. It lies as a connecting link between the Mississippi Valley and the Great Divide, and its flora shows the gradation from one to the other. There is no publication that covers it. New species are still being discovered; variations are so numerous that even an experienced botanist would be in despair.

The cactus of the State are mostly of the genus *Opuntia,* but also included are *Echinocereus, Coryphantha,* and *Neobesseya.* Except for the Opuntias these are all small plants, often hidden by the prairie verdure or tucked among rocks far from well travelled roads, and thus escape general notice. In fact, several species are not mentioned in Britton & Rose' "The Cactaceae" or Wooton & Standley's "The Flora of New Mexico" and many vary widely in their range as reported in these two works.

## OPUNTIA TRICHOPHORA (Engelm.) Br. & Rose

Consider the "Hairy Cactus", *Opuntia trichophora.* Wooton & Standley give its range as Central New Mexico yet I have found numerous plants in Cimarron County, Oklahoma. The description of this hoary-spined little *Opuntia,* given by Britton & Rose, ends with "Fruit not seen."

I brought in a plant from the extreme northwest corner of our state and planted it in my experiment garden in Tulsa, for observation. In spite of the change of temperature, of increased rainfall, and of the drop in altitude from 4500 feet to 700 feet, it condescended to put out a lemon-yellow flower on the third of June and it matured a seed-capsule, or fruit, three months later. The accompanying photograph shows joints and the fruit.

The ripe fruit is 2 cm. long, dry, spiny, vase-shaped, with a parchment-like outer wall, and is packed with large, pale, horny seeds. Some of the seeds, planted in October, sprouted the next May and grew into cylindrical, very fuzzy seedlings. These seedlings developed into young plants, a three-year-old of which had the typical long, hair-like spines, some 5 cm. long, growing on the top joint. Older plants are often long-haired at the top also.

Photo by Jim Slack.

*Opuntia trichophora,* showing a fruit on upper edge of right-central joint. The oldest joint shows the typical long slender hairs of this species. This specimen was collected in northwest Oklahoma.

My observations of a quantity of *Opuntia trichophora* plants, growing above the Las Vegas Hot Springs, near Montezuma, New Mexico, convinced me that this is an exceedingly variable species. I found the plants in Cimarron County, Oklahoma equally variable. In both localities the joints not only on different plants but occasionally on the same plant, would be oblong, pointed at both ends; long, very narrow, oblong; roughly rhomboid; asymetrically heart-shaped. A few young plants had a three-angled first joint, three lobed in cross section. I am still watching several variations and wondering what they will do next.

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Mr. and Mrs. Harold Weston, our Subscription Editors, say that the Journal goes to practically every state of the Union; to Porto Rico and Hawaii, and twenty-one foreign countries from Japan to Czechoslovakia and from Norway to Australia.

# Growing Cacti in Pennsylvania

ROBERT H. WALKER.

In reply to your request for cultural experiences from various parts of the country, may I send a note from southeastern Pennsylvania?

About two years ago I chanced upon Dr. A. D. Houghton's "The Cactus Book" in a public library. The next step was to procure some cactus plants, some seeds, and become a member of the Cactus and Succulent Society of America.

I tried raising my first seedlings in a light warm attic. Eighty-seven seeds germinated but a mouse (what on earth did it want?) ruined eighty-five of them in one night when they were three months old. My next attempt was more successful. At first I used a soil that was composed of equal parts of loam (gathered in the woods), garden soil and sharp sand. Much better results were experienced with soil that was sterilized by scalding instead of baking. Last year I used the soil composition recommended by Dr. Jacolyn Manning in the article, "Growing Cactus Seedlings" in Vol. IV, No. 10 of the Journal, and found it to be very fine.

For larger plants I experimented last year with some soil taken at the mouth of several large drainage pipes on a nearby farm. These pipes carry surface drainage water from about 45 acres of land, and leave, at the outlet, a deposit of fine and very porous soil which has given excellent results in pots. This soil would also contain some fertilizer. *Aporocactus flagelliformis* and the *Phyllocactus,* particularly, delight in this mixture.

All my cacti are pot grown and the pots plunged in flats containing fine coal ash. In summer the flats are placed on a roof and nature attends to the watering so long as she does not become too generous. If the weather is too dry they are watered indirectly by saturating the ashes in which the pots are plunged.

In winter the plants are moved indoors. I am not fortunate enough to have a glass house, but keep them in a room with abundant light where the temperature can be regulated, about 50 degrees at night and 60 degrees during the day.

With this treatment I had an abundance of bloom last year on healthy plants and with the exception of some seedlings lost during the first year, mostly due to ignorance, I have lost since May 1931 only two plants, a *Neobesseya similis* and a *Sclerocactus polyancistra,* both of which perished during the winter. Of course my collection is small, 75 plants of two years and older and 120 under two years old.

The chief pest enemy here is the mealy bug and rarely some scale. With such a small number of plants I can give each one individual attention but I have not found the "forceful spray" method, mentioned by G. A. Frick in his article "Control of Mealy Bug" in Vol. V, No. 6 of the Journal, to be very successful although I have tried it repeatedly. I recently learned of a preparation sold here in the East which has proved very satisfactory. It is "Lethane 420" (must be mixed with a spreader), or "Lethane Jr." (ready for use in water), and its makers claim it will kill not only the bug but also the eggs, which I believe it does if correctly applied. It kills by contact, and by periodic spraying, whether bugs were present or not, and careful inspection and treatment of any new plants received, I have practically eliminated this pest from my cacti.

I have purchased both seeds and plants from advertizers in the Journal and the transactions have been very satisfactory.

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## SECRETARY'S SPINAL COLUMN

The Cactus Club of Riverside met March 1 and had a fine program given by the following speakers: Dr. Webber, "Distribution of Yucca Seed"; Mrs. Hortense Weimer: "Native Desert Food Plants"; Mr. Terrill: "Botany of Cactus."

Our local Haworthia enthusiast, Lowell Frantz, says that Haworthias like partial shade, good soil or "Mountain Music" (leaf mould) and plenty of water just so that it does not stand around the plant. He says that the closely allied Aloes, Gasterias and Apicras like much the same treatment.

Mr. J. R. Brown just addressed the Southern California Cactus Exchange on the eleventh of March. Mr. Brown gave an excellent talk and had it well illustrated with many fine plants from the Soldena Gardens.

Things we would like some comment on: Would it be advisable to have someone take the talks presented at the Society Meetings in

shorthand and who would be willing to do this? Would it be possible to present talks on Cacti and Succulents over the Radio and could somebody be found to sponsor such a program?

On the eighth of April the Cactus Clubs of California will meet in Highland Park for a tour of the gardens of that district. They will meet for a picnic lunch at the home of Mr. and Mrs. Harry Grossman, who have a lovely collection of both Succulents and Cacti.

The Mexican Government believes in conservation and has just passed some new regulations that, on account of their stringency, make the collection of Cacti for exportation very difficult. I have not heard if this affects the exportation of other succulent plants such as the Echeverias, Agaves, Dudleyas or Idrias but as far as I know no move has ever been made to protect these.

The San Gabriel Valley Cactus Society will meet the twenty-eighth of March at the home of Mr. Otto Worthy on east Merced Ave., Covina, Calif. The meeting convenes with a pot luck supper about six o'clock to get the members in good humor for the speakers to torment. They extend a cordial invitation to visit their club at that time.

The Long Beach Cactus and Succulent Society has a very active Junior Division. The youngsters are very busy now getting seed of Xerophites and if their activities keep up may become as good a bunch of traders as the Senior bunch.

TED HUTCHISON,
Azusa, California.

# Specializing in *Kalanchoes* and *Bryophyllums*

The *Kalanchoe, Byrophyllum* group of succulents has not been dealt with to my knowledge, at least not since I have been reading the Society's Journal, by any of the able botanists or horticulturists.

To me, this is a very interesting group. The vegetative variances are great, the blooms are interesting and the culture requirements are not exacting. I am growing these plants on a hill top, seven hundred feet elevation in the Silver Lake District of Los Angeles City and so far, the varieties which I have, stand the climatic and soil conditions. I have the following in my collection:

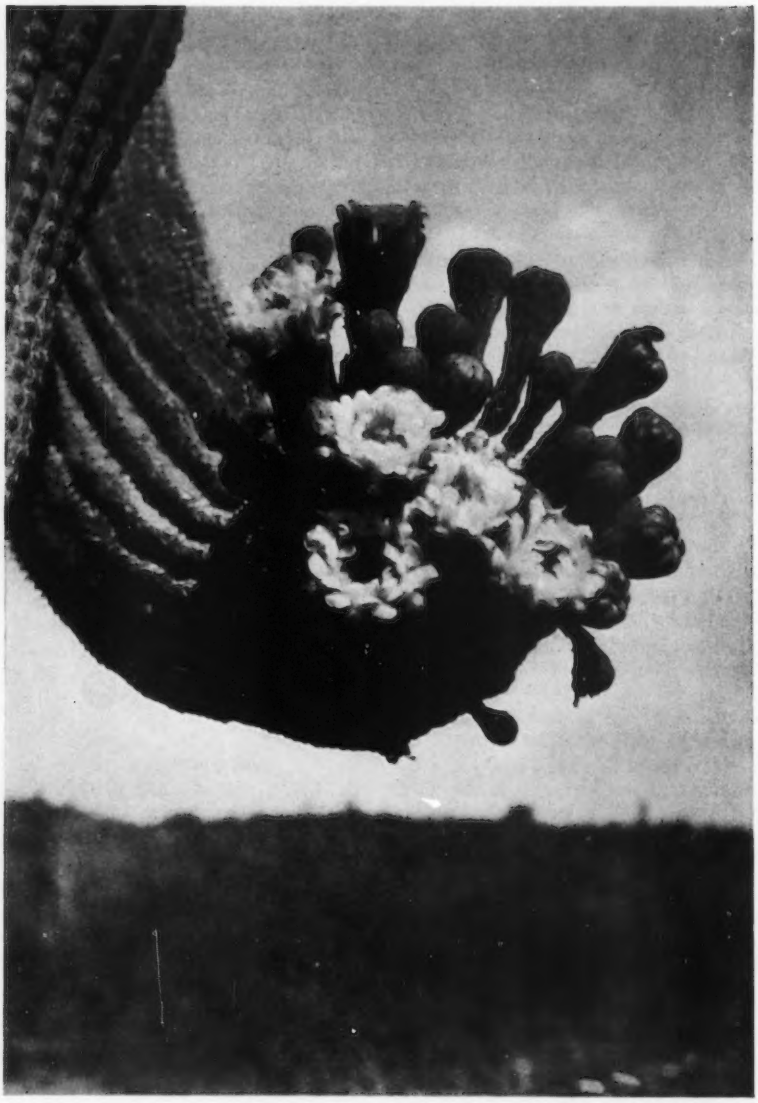
*Beharensis, Brachyloba, Shimperiana, Crenatum, Carnea, Cassiopeia, Daigremontianum, Dyerii, Engelerii, Aliciae, Flammea, Feldtschenkoi, Farinacea, Globulifiea Coccinea, Gastonia Bonnieri, Glauscesens, Grandiflora, Grandidieri, Kirkii, Kewensis, Laxiflora, Mineata, Marmorata, Orgyalis, Pilosa, Peltata, Quartiniana, Rotundifolia, Schumacherii, Synsepala, Spathulata, Somaliensis, Tubiflorum, Thyrsiflora, Velutina, Welwitzschii, Pinnatum,* and about a dozen unnamed varieties.

Some are classed as *Kalanchoe* and some as *Byrophyllum* and I have been assured by supposedly able botanists that either classification is correct. My experience to date demonstrates that there are several distinctions in growing habits, perpetuation, etc. *Tubiflorum* and *Daigremontianum* have a very similar habit of developing and dropping young plants. *Englerii* will grow a new plant on the edge of the leaves, which then withers and falls to the ground and the new plant takes root. *Brachyloba* will elongate, bloom and die, and if the plant would be saved, it must not be allowed to go to seed. The *Pinnatum* and an unnamed type drop their leaves, which readily produce young plants in that manner. *Synsepala* will shoot a spike eighteen to twenty inches in the air, a new plant forming at the end of the spike and as it gains in size and weight eventually bears the spike to the ground where it takes root. *Rotundifolia, Spathulata* and a half dozen unnamed varieties all seem to have the same habit and bloom at the same time. *Flamea, Globulifira Coccinea* and other unnamed species apparently form another group. *Crenatum* and *Quartiniana*, while there may be a difference in these two, it is not readily apparent. *Schumacherii, Shimperiana, Dyerii* and *Cassiopeia* are in another group. *Gastonia Bonnieri, Pilosa, Eliciae* and *Peltata* and I might add—*Beharensis* are outstanding species.

I would be interested to know if others in Southern California are interested in this group and for that matter would value contacting anyone who has knowledge of these plants and where new types can be secured.

F. E. JOHNSON. 2316 Baxter St., Los Angeles

EDITOR'S NOTE: The author does not claim that the spelling of these names is correct and he will welcome corrections and notations as to whether they are Bryophyllums or Kalanchoes. The list will soon be republished with interesting additions to this collection.—S.E.H.



Courtesy Standard Oil Bulletin

*Carnegiea gigantea* ("Suhauro") in flower

The flavor of the fruit of *Echinocereus enneacanthus* is so much like that of a strawberry that preserves made from them can not be distinguished from the strawberry jam. In Southern Texas considerable use is made of the fruit of this species both fresh and preserved. The common name of this plant among the natives is "Strawberry Cactus."

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The possession of postage stamps with pictures of cacti on them greatly please philatelists. Mexicans are rightfully proud of the picture of an Opuntia plant on their national seal; but the most boastful possessor of a cactus picture that has come to our attention was a sailor in the United States Navy on the Battleship Arizona. He had an Opuntia tattooed on his forearm, and indignantly insisted that the picture represented a cactus and not an Opuntia as we suggested.

# What Grows Where

## Cacti Listed in Accordance With Their Geographical Origin

## Compiled and Copyrighted for Mrs. John D. Wright, Santa Barbara, Calif., 1933

*By* ANNE SMITH

### NEW MEXICO

#### OPUNTIEAE TRIBE
#### OPUNTIA
#### SUBGENUS I. CYLINDROPUNTIA

**Thurberianae Series**

*O. davisii*
Type Locality: Upper Canadian, about Tucumcari Hills, near Llano Estacado, Texas.
Distribution: Western Texas and eastern New Mexico.

*O. viridiflora*
Type Locality: Santa Fe, New Mexico.
Distribution: It is quite common on the hills just north of Santa Fe about Fort Marcy.

*O. whipplei*
Type Locality: About Zuni, New Mexico.
Distribution: Northern New Mexico and Arizona to southwestern Colorado and probably southern Utah. Also reported by Coulter in southern California, Lower California, and Sonora but not to be expected there.

**Echinocarpae Series**

*O. acanthocarpa*
Type Locality: On the mountains of Cactus Pass, Arizona, about 500 miles west of Santa Fe, New Mexico.
Distribution: Arizona and California; reported also from Utah, Nevada, and Sonora.

**Imbricatae Series**

*O. imbricata*
Type Locality: Unknown; introduced into England by Loddiges in 1820.
Distribution: Central Colorado to Texas, New Mexico, and central Mexico.

**Fulgidae Series**

*O. spinosior*
Type Locality: South of the Gila River.
Distribution: Arizona, western New Mexico, and northern Mexico.

**Clavatae Series**

*O. stanlyi*
Type Locality: On the del Norte and Gila, New Mexico.
Distribution: Southwestern New Mexico to eastern Arizona and adjacent Mexico.

*O. clavata.*
Type Locality: Albuquerque, New Mexico.
Distribution: New Mexico, chiefly in the central part of the State.

*O. grahamii*
Type Locality: Near El Paso, Texas.
Distribution: Western Texas, New Mexico, and adjacent parts of Mexico.

**Tortispinae Series**

*O. tortispina*
Type Locality: On the Camanchica Plains near the Canadian River.
Distribution: Wisconsin to South Dakota, Texas, Kansas, Colorado, and New Mexico.

*O. stenochila*
Type Locality: Canyon of Zuni, New Mexico.
Distribution: Western New Mexico and Arizona.

**Phaeacanthae Series**

*O. zuniensis.* GRIFFITHS—Bull. Torr. Club, 43, p. 86, 1916.
Type Locality: Zuni, New Mexico.
Distribution: Common in open sage brush country in that region.

*O. dillei.* GRIFFITHS—Rep. Mo. Bot. Garden 20, p.82, 1909.
Type Locality: San Andreas Canyon of the Sacramento Mountains of New Mexico, about 15 miles south of Alamogordo. Seems to be a rare species.
Distribution: Not cited.

*O. wootonii.* GRIFFITHS—Rep. Mo. Bot. Garden, 2, p. 171, 1910.
Type Locality: Organ Mountains, New Mexico.
Distribution: Not cited.

*O. expansa.* GRIFFITHS—Proc. Biol. Soc. Washington, 29, p. 14, 1916.
Type Locality: Near Anton Chico, New Mexico.
Distribution: Common among the pinons and junipers of the Anton Chico region, New Mexico.

Dillenianae Series

*O. chlorotica*
Type Locality: On both sides of the Colorado from San Francisco Mountains to headwaters of Bill Williams River.
Distribution: Sonora and New Mexico to Nevada, California, and Lower California.

Polyacanthae Series

*O. arenaria*
Type Locality: Sandy bottoms of the Rio Grande near El Paso.
Distribution: Texas and southern New Mexico.

*O. trichophora*
Type Locality: Mountains near Albuquerque, New Mexico.
Distribution: New Mexico, Texas, and Oklahoma.

*O. juniperina*
Type Locality: Not cited.
Distribution: On dry hills among junipers in vicinity of Cedar Hill, San Juan County, New Mexico.

*O. hystricina*
Type Locality: Colorado Chiquito and on San Francisco Mountains.
Distribution: New Mexico to Arizona and Nevada.

*O. sphaerocarpa*
Type Locality: Mountains near Albuquerque, New Mexico.
Distribution: Known only from type locality.

## CEREEAE TRIBE
## SUBTRIBE CEREANAE

Peniocereus

*P. greggii*
Type Locality: Near Chihuahua, Mexico.
Distribution: Western Texas, southern New Mexico and Arizona to Sonora, Chihuahua, and Zacatecas.

## SUBTRIBE 3. ECHINOCEREANAE

Echinocereus

*E. triglochidiatus*
Type Locality: Wolf Creek, New Mexico.
Distribution: Western Texas, New Mexico, and Colorado.

*E. neo-mexicanus*
Type Locality: Mesa west of the Organ Mountains, New Mexico.
Distribution: Known only from the type locality.

*E. conoideus*
Type Locality: On the Upper Pecos, New Mexico.
Distribution: Southeastern New Mexico and western Texas.

*E. coccineus*
Type Locality: About Santa Fe, New Mexico.
Distribution: New Mexico and Arizona to Utah and Colorado.

*E. rosei*
Type Locality: Agricultural College, New Mexico.
Distribution: In mountains and dry hills and sometimes on the mesas of southern New Mexico, western Texas, and adjacent parts of northern Mexico.

*E. chloranthus*
Type Locality: About El Paso, Texas.
Distribution: Western Texas, southeastern New Mexico, and northern Mexico.

*E. viridiflorus*
Type Locality: Prairies about Wolf Creek, New Mexico.
Distribution: Southern Wyoming to eastern New Mexico, western Kansas, western Texas, and South Dakota.

*E. dasyacanthus*
Type Locality: El Paso, Texas.
Distribution: Western Texas, southern New Mexico, and northern Chihuahua. It has been reported from Arizona, but doubtless wrongly.

*E. standleyi*
Type Locality: Not cited.
Distribution: Collected in the Sacramento Mountains, New Mexico.

*E. octacanthus*
Type Locality: Northern Texas.
Distribution: Known to us definitely only from northwestern Texas, but reported by Coulter from New Mexico and Utah.

*E. roetteri*
Type Locality: Near El Paso, Texas.
Distribution: Southwestern Texas; Chihuahua, near El Paso, and southeastern New Mexico.

*E. fendleri*
Type Locality: Near Santa Fe, New Mexico.
Distribution: Texas to Utah, Arizona, and northern Sonora and Chihuahua, Mexico.

*E. enneacanthus*
Type Locality: Near San Pablo, south of Chihuahua, Mexico.
Distribution: Northern Mexico, New Mexico, and southern Texas.
*E. stramineus*
Type Locality: Mountain slopes, El Paso, Texas .
Distribution: Western Texas, southern New Mexico, and northern Chihuahua.

**SUBTRIBE 4. ECHINOCACTANAE**

**Pediocactus**

*P. simpsonii*
Type Locality: Butte Valley in the Utah desert and Kobe Valley, farther west.
Distribution: Kansas to New Mexico, north to Nevada, Washington, Idaho, and Montana.

**Toumeya**

*T. papyracantha*
Type Locality: Between the lower hills near Santa Fe, New Mexico.
Distribution: Rare in isolated localities in northern New Mexico; reported from California, probably erroneously.

**Ferocactus**

*F. wislizeni*
Type Locality: Donana, New Mexico.
Distribution: El Paso, Texas, west through southern New Mexico and Chihuahua to Arizona and Sonora and perhaps south along the Gulf of California into Sinaloa. Reported also from Utah, perhaps erroneously, and from Lower California.

**Homalocephala**

*H. texensis*
Type Locality: Texas; type grown in a botanical garden from seed.
Distribution: Southeastern New Mexico, Texas, and northern Mexico.

**SUBTRIBE 6. CORYPHANTHANAE**

**Coryphantha**

*C. macromeris*
Type Locality: Near Donana, New Mexico.
Distribution: Southern New Mexico, western Texas, and Chihuahua, south to Zacatecas, Mexico.
*C. muehlenpfordtii*
Type Locality: Mexico.
Distribution: Northern Chihuahua, western Texas, and southern New Mexico.
*C. robustispina*
Type Locality: Cited first as Sonora, then as south side of the Baboquivari Mountains in northern Sonora.
Distribution: Mountains of southern Arizona, southwestern New Mexico, and northern Sonora.
*C. neo-mexicana*
Type Locality: Western Texas to New Mexico, doubtless at El Paso.
Distribution: Western Texas, New Mexico, and northern Chihuahua.
*C. aggregata*
Type Locality: Head waters of the Gila.
Distribution: Western New Mexico, southeastern Arizona, and northern Sonora.

**Escobaria**

*E. tuberculosa*
Type Locality: Mountains near El Paso and eastward.
Distribution: Southwestern Texas, southern New Mexico, and adjacent Mexico.
*E. dasyacantha*
Type Locality: El Paso and eastward.
Distribution: Western Texas, southern New Mexico, and northern Chihuahua.

**Neomammillaria**

*N. meiacantha*
Type Locality: Western Texas, and New Mexico.
Distribution: Texas, New Mexico, and northern Mexico.
*N. wrightii*
Type Locality: Anton Chico on the Pecos east of Santo Fe, New Mexico.
Distribution: Mountains of northeastern New Mexico.
*N. microcarpa*
Type Locality: "On the Gila, 3,000 to 4,000 feet above the sea."
Distribution: Southwestern Texas and Chihuahua to Arizona and Sonora; recorded from southern California and southern Utah.

The star-shaped spines on *Euphorbia stellaespina* are not spines at all, but degenerated inflorescences.

This dwarf Euphorbia was probably *Euphorbia esculenta* Marl. and the name vingerpol is the native name for the plant.

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H. J. S. (*Australia*)